

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A data transfer procedure for transferring data of a data sequence between a transmitting entity and a receiving entity, which entities each comprise a higher data handling layer and a lower data handling layer, the procedure comprising:

transferring down from the higher data handling layer of the transmitting entity to the lower data handling layer of the transmitting entity a data unit of the data sequence, which data unit comprises at least one a plurality of segments each having a respective position in the data unit;

transmitting via a first transmission link between the transmitting entity and the receiving entity each of the at least one segment plurality of segments from the lower data handling level layer of the transmitting entity to the lower data handling level layer of the receiving entity;

sending receiving an acknowledgement of receipt of the at least one of the plurality of segments from the lower data handling level layer of the receiving entity to at the lower data handling level layer of the transmitting entity;

transferring up the at least one segment from the lower data handling layer of the receiving entity to the higher data handling layer of the receiving entity in data sequence order;

sending a confirmation of receipt of the at least one of the plurality of segments from the lower data handling layer of the transmitting entity to the higher data handling layer of the transmitting entity based on the acknowledgement;

and wherein the higher data handling layer of the transmitting entity is arranged to retain the data unit until such time as an at least implied acknowledgement of receipt of earlier segments in the sequence is sent back received from the receiving entity to by the lower data handling level layer of the transmitting entity entity;

determining by the higher data handling layer of the transmitting entity that an earlier segment relative to the at least one of the plurality of segments in the sequence is not confirmed as being received by the receiving entity; and

retransmitting, based on the determining, the entire data unit via a second transmission link between the transmitting entity and the receiving entity.

2. (Original) A data transfer procedure as claimed in claim 1, wherein the higher data handling layer of the transmitting entity comprises a store for storing the data unit, and the data unit is retained in the store until the acknowledgement of receipt has been sent back, when the data unit is then removed from the store.

3. (Currently Amended) A data transfer procedure as claimed in ~~claim 1 or 2~~ claim 1, wherein ~~the at least one segment of each data unit in the data sequence has a position in the data sequence;~~ the lower data handling layer of the transmitting entity comprises a store for storing data pertaining to the position of ~~the at least one each segment transmitted therefrom; and the lower data handling layer of the receiving entity comprises a store for storing data pertaining to the position of the at least one segment received thereby, wherein receiving the acknowledgement further comprises receiving an indication of the respective position of the at least one of the plurality of segments.~~

4. (Currently Amended) A data transfer procedure as claimed in claim 3, further comprising:

determining that the first transmission link is broken; ~~and~~
~~when the first transmission transmitting link is broken, reestablishing the transmitting link by purging the stores store of data in the lower data handling layers of both the transmitting entity and the receiving entity; and~~
establishing the second transmission link.

5. (Currently Amended) A data transfer procedure as claimed in claim 4, wherein the first transmission transmitting link is determined to be broken by:

~~the transmitting entity waiting for a period of time for the acknowledgement of receipt of the at least one of the plurality of segments segment from the lower data handling level layer of the receiving entity;~~

~~the lower data handling level of the transmitting entity retransmitting the at least one segment when the acknowledgement of receipt is not received;~~

repeating the waiting and the retransmitting; and
deciding that the first transmission link is broken after the waiting and the retransmitting
have been repeated a number of times.

6. (Canceled)

7. (Currently Amended) A data transfer procedure as claimed in any preceding claim claim 1, wherein the transmitting entity is a mobile station and the receiving entity is a serving GPRS, GPRS support node in a GPRS system.

8. (Currently Amended) A data transfer procedure as claimed in claim 7, wherein the higher data handling layers are both layer comprises an SNDCP layers layer and the lower data handling layers are both layer comprises a LLC layers layer.

9. (Currently Amended) A data transfer procedure for transferring to a receiving entity data of a data sequence from a transmitting entity comprising a higher data handling layer and a lower data handling layer, the procedure comprising:

transferring down from the higher data handling layer to the lower data handling layer a data unit of the data sequence, which data unit comprises at least one a plurality of segments each having a respective position in the data unit;

transmitting on a first transmission link from the lower data handling level layer of the transmitting entity each of the at least one segment for plurality of segments to the receiving entity;

receiving at the lower data handling level layer an acknowledgement of receipt of the at least one plurality of segments segment from the receiving entity;

sending a confirmation of receipt of the at least one of the plurality of segments from the lower data handling layer to the higher data handling layer based on the acknowledgement;

and wherein the higher data handling layer of the transmitting entity is arranged to retain the data unit until such time as an at least implied acknowledgement of receipt of earlier segments in the sequence is received from the receiving entity at the lower data handling level:
level:

determining by the higher data handling layer that an earlier segment relative to the at least one of the plurality of segments in the sequence is not confirmed as being received by the receiving entity; and

retransmitting, based on the determining, the entire data unit via a second transmission link between the transmitting entity and the receiving entity.

10. (Original) A data transfer procedure as claimed in claim 9, wherein the higher data handling layer comprises a store for storing the data unit, and the data unit is retained in the store until the acknowledgement of receipt has been received, when the data unit is then removed from the store.

11. (Currently Amended) A data transfer procedure as claimed in ~~claim 9 or 10~~ claim 9, wherein ~~the at least one segment of each data unit in the data sequence has a position in the data sequence, and the lower data handling layer comprises a store for storing data pertaining to the position of the at least one each segment transmitted therefrom, wherein receiving the acknowledgement further comprises receiving an indication of the respective position of the at least one of the plurality of segments.~~

12. (Currently Amended) A data transfer procedure as claimed in claim 11, further comprising:

determining that the first transmission link is broken; and
when the first transmission transmitting link is broken, ~~reestablishing the transmitting link by purging the stores store~~ of data in the lower data handling layer; and
establishing the second transmission link.

13. (Currently Amended) A data transfer procedure as claimed in claim 12, wherein the ~~first transmission~~ transmitting link is determined to be broken by:

waiting for a period of time for the acknowledgement of receipt of ~~the~~ at least one of the plurality of segments segment from the receiving entity;
the lower data handling level retransmitting the at least one segment when the acknowledgement of receipt is not received;

repeating the waiting and the retransmitting; and
deciding that the first transmission link is broken after the waiting and the retransmitting
have been repeated a number of times.

14. (Cancelled)

15. (Currently Amended) A data transfer procedure as claimed in ~~any of claims 9 to 14 claim~~
9, wherein the transmitting entity is a mobile station for a GPRS system.

16. (Currently Amended) A data transfer procedure as claimed in claim 15, wherein the
higher data handling layer is an SNDCP layer and the lower data handling layers layer is an LLC
layer.

17. (Currently Amended) A communication system comprising:
a transmitting entity for transmitting data of a data sequence, which transmitting entity
comprises a higher data handling layer and a lower data handling layer;

a receiving entity for receiving the data of the data sequence, which receiving entity
comprises a higher data handling layer and a lower data handling layer;
means for transferring down from the higher data handling layer of the transmitting entity
to the lower data handling layer of the transmitting entity a data unit of the data sequence, which
data unit comprises at least one a plurality of segments each having a respective position in the
data unit;

means for transmitting via a first transmission link between the transmitting entity and the
receiving entity each of the at least one segment plurality of segments from the lower data
handling level layer of the transmitting entity to the lower data handling level layer of the
receiving entity,

means for sending receiving an acknowledgement of receipt of the at least one of the
plurality of segments segment from the lower data handling level layer of the receiving entity to
at the lower data handling level layer of the transmitting entity;

means for transferring up the at least one segment from the lower data handling layer of the receiving entity to the higher data handling layer of the receiving entity in data sequence order;

means for sending a confirmation of receipt of the at least one of the plurality of segments from the lower data handling layer of the transmitting entity to the higher data handling layer of the transmitting entity based on the acknowledgement,

and wherein the higher data handling layer of the transmitting entity is arranged to retain the data unit until such time as an at least implied acknowledgement of receipt of earlier segments in the sequence is sent back received from the receiving entity to by the lower data handling level layer of the transmitting entity. entity;

means for determining by the higher data handling layer of the transmitting entity that an earlier segment relative to the at least one of the plurality of segments in the sequence is not confirmed as being received by the receiving entity; and

means for retransmitting, based on the determining, the entire data unit via a second transmission link between the transmitting entity and the receiving entity.

18. (Original) A communication system as claimed in claim 17, wherein the higher data handling layer of the transmitting entity comprises a store for storing the data unit, the data handling layer being arranged to retain the data unit in the store until the acknowledgement of receipt has been sent back, when the data unit is then removed from the store.

19. (Currently Amended) A communication system as claimed in ~~claim 17 or 18~~ claim 17, wherein the at least one segment of each data unit in the data sequence has a position in the data sequence, the lower data handling layer of the transmitting entity comprises a store for storing data pertaining to the position of the at least one each segment transmitted therefrom, and the lower data handling layer of the receiving entity comprises a store for storing data pertaining to the position of the at least one segment received thereby, wherein receiving the acknowledgement further comprises receiving an indication of the respective position of the at least one of the plurality of segments.

20. (Currently Amended) A communication system as claimed in claim 19, further comprising:

means for determining that the first transmission link is broken; and
means for ~~reestablishing the transmitting link by purging the stores of data in the lower data handling layers of both the transmitting entity and the receiving entity, and~~
means for establishing the second transmission link.

21. (Currently Amended) A communication system as claimed in claim 20, wherein the means for determining that the first transmission link is broken is operable:

to cause the transmitting entity to wait for a period of time for the acknowledgement of receipt of the at least one of the plurality of segments segment from the lower data handling level layer of the receiving entity;
to cause the lower data handling level of the transmitting entity to retransmit the at least one segment when the acknowledgement of receipt is not received;
to repeat the waiting and the retransmitting; and to decide that the first transmission link is broken after the waiting and the retransmitting have been repeated a number of times.

22. (Canceled)

23. (Currently Amended) A communication system as claimed in any of claims 17 to 22 claims 17, wherein the transmitting entity is a mobile station and the receiving entity is a serving GPRS support node in a GPRS system.

24. (Currently Amended) A communication system as claimed in claim 23, wherein the higher data handling layers are both layer comprises an SNDCP layers layer and the lower data handling layers are both layer comprises an LLC layers layer.

25. (Currently Amended) A transmitting entity for transmitting data of a data sequence for a receiving entity in a communications system, the transmitting entity comprising:

a higher data handling layer;
a lower data handling layer;

means for transferring down from the higher data handling layer to the lower data handling layer a data unit of the data sequence, which data unit comprises at least one a plurality of segments each having a respective position in the data unit;

means for transmitting on a first transmission link from the lower data handling level layer each of the at least one segment for plurality of segments to the receiving entity;

means for receiving at the lower data handling level layer an acknowledgement of receipt of the at least one of the plurality of segments segment from the receiving entity; and

means for sending a confirmation of receipt of the at least one of the plurality of segments from the lower data handling layer to the higher data handling layer based on the acknowledgement;

means for causing the higher data handling layer to retain the data unit until such time as an at least implied acknowledgement of receipt of earlier segments in the sequence is received at the lower data handling level layer from the receiving entity entity;

means for determining by the higher data handling layer that an earlier segment relative to the at least one of the plurality of segments in the sequence is not confirmed as being received by the receiving entity; and

means for retransmitting, based on the determining, the entire data unit via a second transmission link from the lower data handling layer to the receiving entity.

26. (Original) A transmitting entity as claimed in claim 25, wherein the higher data handling layer comprises a store for storing the data unit, and the data unit is retained in the store until the acknowledgement of receipt has been received, when the data unit is then removed from the store.

27. (Currently Amended) A transmitting entity as claimed in claim 25 or 26 claim 25, wherein the at least one segment of each data unit in the data sequence has a position in the data sequence; and the lower data handling layer comprises a store for storing data pertaining to the position of the at least one each segment transmitted therefrom, wherein receiving the acknowledgement further comprises receiving an indication of the respective position of the at least one of the plurality of segments.

28. (Currently Amended) A transmitting entity as claimed in claim 27, further comprising:
means for determining that the first transmission link is broken; and
means for ~~reestablishing the transmitting link by purging the stores store~~ of data in the lower data handling layer; and
means for establishing the second transmission link.
29. (Currently Amended) A transmitting entity procedure as claimed in claim 28, wherein the means for determining that the first transmission link is broken is operable:
to wait for a period of time for the acknowledgement of receipt of the at least one of the plurality of segments segment from the receiving entity;
~~to cause the lower data handling level to retransmit the at least one segment when the acknowledgement of receipt is not received;~~
to repeat the waiting and the retransmitting; and
to decide that the first transmission link is broken after the waiting and the retransmitting have been repeated a number of times.
30. (Canceled)
31. (Currently Amended) A transmitting entity as claimed in any of ~~claims 25 to 30~~ claim 25, wherein the transmitting entity is a mobile station for a GPRS system.
32. (Currently Amended) A transmitting entity as claimed in claim 31, wherein the higher data handling layer is an SNDCP layer and the lower data handling ~~layers~~layer is an LLC layer.